

Approved: April 10, 1995.

William F. Riley,

Acting Commissioner of Customs.

John P. Simpson,

Deputy Assistant Secretary of the Treasury.

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DEPARTMENT OF THE INTERIOR

Mineral Management Service

30 CFR Part 250

RIN 1010-AB50

Oil and Gas and Sulphur Operations in the Outer Continental Shelf

AGENCY: Minerals Management Service, Interior.

ACTION: Proposed rule.

SUMMARY: This proposed rule revises requirements for preventing hydrogen sulfide (H₂S) releases and protecting human safety. Requirements for visual and audible warning systems, personnel protection, training, H₂S and sulphur dioxide (SO₂) detection and monitoring, and H₂S flaring are proposed.

DATES: Comments must be received or postmarked no later than July 10, 1995 to be considered in this rulemaking.

ADDRESSES: Comments should be mailed or hand-carried to the Department of the Interior; Minerals Management Service; Mail Stop 4700; 381 Elden Street; Herndon, Virginia 22070-4817; Attention: Chief, Engineering and Standards Branch.

FOR FURTHER INFORMATION CONTACT: E.P. Danenberger, telephone (703) 787-1598, or John Mirabella, (703) 787-1600.

SUPPLEMENTARY INFORMATION:

Background

On January 19, 1989 (54 FR 2332), the Occupational Safety and Health Administration (OSHA) published a final rule in the **Federal Register** to amend requirements contained in 29 CFR 1910.1000. The requirements concerned permissible exposure limits (PEL) for 164 toxic substances that included H₂S and SO₂. The Minerals Management Service (MMS) determined that its regulations at § 250.67 should be revised to be consistent with OSHA's PEL's and published proposed revisions in the **Federal Register** on August 15, 1990 (55 FR 33326). Requirements for training, signs, SO₂ sensors, mud sensors, and materials were also revised or added, and additional information was requested regarding the calibration frequency of H₂S sensors.

A Circuit Court Appeals Action invalidated OSHA's final rule. As a consequence, OSHA resumed enforcing contaminant exposure limits that were in effect prior to the issuance of new limits on January 19, 1989. Because of the extensive revisions resulting from comments to the proposed rule (published on August 15, 1990), and because of the court decision on OSHA's 1989 final rule, MMS is re-proposing the rule and requesting additional comments.

The MMS proposes to retain the H₂S concentration level thresholds similar to those in the current rule. Also, new sections concerning H₂S flaring and SO₂ concentration levels have been added.

The MMS proposes to incorporate the latest editions of the American National Standards Institute's (ANSI) American National Standard Practices for Respiratory Protection (ANSI Z88.2-1980) and the National Association of Corrosion Engineers' (NACE) Standard (MR-01-75), Recommended Practice (RP), Sulfide Stress Cracking Resistant Metallic Materials for Oil Field Equipment.

Discussion of Specific Comments

The following comments and responses are grouped by specific section or paragraph title.

Subpart D—Oil and Gas Drilling Operations

§ 250.67(b) Definitions.

Comment: The term "potentially result in atmospheric concentrations of 15 ppm or more of H₂S" is vague and the definition for "Zones known to contain H₂S" should be limited to facilities known to contain H₂S where atmospheric concentrations of 10 parts per million (ppm) or more of H₂S have been verified.

Response: Because human safety is dependent upon advance preparation, the definition for zones known to contain H₂S must be based on the potential for a high volume release. Gas with an H₂S concentration of only 20 ppm, if released at a rate of 1,000,000 cubic feet per day (1,000 MCFD), exposes all personnel within 24 feet to concentrations of 20 ppm (Pasquill-Gifford dispersion equation using wind speed of 1 mile per hour). Therefore, the definition encompasses most H₂S-bearing zones which could flow in volumes of 1,000 MCFD or more.

The 15-ppm concentration mentioned in the above comment has been changed to 20 ppm, as currently required in the regulations.

§ 250.67(c) Request for classification of probability of encountering H₂S during operations.

Comment: The definition of "Zones where the absence of H₂S has been confirmed," should recognize the possibility of H₂S being generated as a result of water flooding.

Response: The MMS agrees that H₂S could be generated during production operations in the initial stages of a new water flood project. Paragraph (c) is amended to require a reclassification when new data indicate the presence of H₂S.

§ 250.67(e) Drilling and well-completion operations in zones where the presence of H₂S is unknown.

Comment: The first sentence of § 250.67(e) should be revised to require compliance with well-control fluid provisions in zones where the presence of H₂S is unknown.

Response: The MMS agrees with this suggestion. Compliance with the fluid program requirements of paragraph (i) in an unknown area would enable the operator to safely continue operations if H₂S is encountered. The title and text of paragraph (e) have been revised accordingly.

§ 250.67(h)(1) H₂S Contingency Plan.

Comment: Two commenters suggested a requirement for H₂S-detection, monitoring, and alarm systems on vessels attendant to a facility. Hydrogen sulfide is heavier than air and tends to settle and accumulate in lower areas. The commenters are concerned that horns and lights from a production platform may be insufficient to warn a vessel tied up below the platform or that gas might accumulate at the vessel rather than the producing facility.

Response: The MMS agrees that a low volume, low-concentration release of H₂S might migrate down to a vessel moored on the leeward side of the facility and be detected on the vessel before the platform. The need for H₂S sensors on attendant vessels depends on the positioning procedures described in the Contingency Plan. Requirements for sensors are specified in § 250.67(h)(6) H₂S-detection and H₂S-monitoring equipment (formerly paragraph (h)(5)). A new paragraph (h)(6)(v) has been added to require H₂S-detection systems on certain vessels attendant to facilities.

During a recent drilling operation, it was necessary to divert gas containing H₂S. Personnel from platforms as far away as 12 miles had to be evacuated. This incident identified the importance of notifying nearby manned facilities. The MMS has proposed to require lists

of facilities to be notified in case of a release of H₂S.

Comment: Six organizations commented on the proposed new paragraph (h)(1)(viii) and (ix) that addresses the toxic hazard of SO₂, a gas produced when H₂S is ignited. The commenters suggested clarification of the term "portable monitors" and the monitoring procedures.

Response: The proposed rule allows the use of portable equipment to monitor personnel exposure to SO₂ when H₂S is intentionally or accidentally burned. The MMS recognizes that operators may choose the use permanent SO₂ detectors to monitor flares.

Other commenters suggested that the rule might be interpreted to require continuous monitoring of the SO₂. The MMS recognizes that the irritating odor of SO₂ warns personnel about its presence. The purpose of the requirement is to have a means of measuring the concentration to determine if PEL's are exceeded. The MMS has clarified the requirement in new paragraphs (h)(1)(xi) (C) and (D).

New paragraph (h)(1)(xi).

The MMS has determined that the current regulations at 30 CFR 250.67 and 250.175 do not clearly address the flaring of gas containing H₂S. Therefore, a new paragraph has been added to require that the H₂S Contingency Plan described the operational conditions during which gas containing H₂S could be flared, estimate the maximum gas flow rate, H₂S concentration and duration of flaring, assess the risks to personnel, and identify the precautionary measures to be taken.

§ 250.67(h)(2) Training Program.

Comment: New training requirements are not needed unless there is some specific reason for increased training.

Response: The proposed requirements do not include additional training requirements. In fact, the requirement for training has been reduced from a training session upon arrival and every subsequent 7-day period, to an initial training session repeated annually.

Comment: The proposed definition of a "visitor" implies that anyone remaining onboard overnight would be subject to annual H₂S training certification requirements. The commenter's opinion was that the proposed briefing is adequate for all visitors whether or not they depart the day of arrival.

Response: Any person who remains at a facility for an extended period (i.e., overnight) should be fully trained in the hazards of H₂S and the provisions for personnel protection.

Comment: Visitors should be properly trained in the use of the type of respirator available on the facility.

Response: The MMS agrees. Language has been added to require that visitors be given a hands-on demonstration and practice in donning and adjusting the assigned respirator.

Comment: Visitors not temporarily or permanently employed at the facility should not be required to receive the full H₂S training required for operator and contract personnel.

Response: This paragraph was received to clarify that visitors who do not remain overnight need only receive abbreviated training outlined in the paragraph. However, visitors who do remain overnight will be required to receive full H₂S training.

Comment: Commenters on § 250.67(h)(2)(iv) stated that OSHA plans to withdraw the restriction on wearing contact lenses with a respirator (29 CFR 1910.134(e)(5)(ii)) and recommended investigating this proposed change and amending MMS requirement for consistency with the OSHA requirement.

Response: The MMS is aware that OSHA has considered withdrawing the restriction on wearing contact lenses with a respirator. If OSHA publishes final revisions of this requirement, MMS will consider revising its requirement accordingly.

Comment: The requirement of § 250.67(h)(2)(v)(B) for three resuscitators could be reduced for platforms having fewer than three people onboard.

Response: Facilities that are manned for 24 hours per day will normally have more than three people onboard, and visits to unmanned facilities usually involve several people. Therefore, the proposed requirement was not changed.

§ 250.67(h)(3) Drills.

Comment: The requirement for a drill within 24 hours after duty begins and once during every subsequent 7-day period is excessive and should be reduced.

Response: This is an existing requirement that has been successfully implemented in the field. Contract personnel may only be on the platform for a few days. The proposed requirement ensures that they receive the benefit of regular drills. Further, the weekly training requirement was eliminated with the understanding that each employee would be participating in a weekly drill.

§ 250.67(h)(4) Visual warning system (formerly paragraph (h)(3)).

Comment: This paragraph was not initially proposed for revision, but two

commenters recommended that operators be allowed to display colored lights as visual warning signs for H₂S.

Response: The revised rule permits electronic systems that alert vessels and clearly explain the danger.

Comment: Four organizations claimed that it is not possible to put the wording "Danger-Poisonous Gas-Hydrogen Sulfide" in 12-inch-high letters on a 4-foot x 8-foot sign and still have room for the wording about the red warning flags.

Response: The MMS now proposes wording painted in the following format on a sign 14.5 feet wide and 6 feet high:

In 12-inch-high letters:

DANGER

POISONOUS GAS

HYDROGEN SULFIDE

and in 7-inch-high letters:

DO NOT APPROACH IF RED FLAG IS FLYING.

According to the Virginia Department of Transportation's highway sign standard, 1 inch of letter height is required for each 50 feet of safe reading distance; therefore, the 12-inch-high letters could be safely read from a distance of 200 yards, and the 7-inch-high letters could be safely read from a distance of 116 yards. The MMS considers these distances to be sufficient for helicopter and vessel pilots to read, heed, and change course.

The revised paragraph also provides the option of supplementing existing signs, thereby saving the operator the expense of replacement or repainting.

Comment: Exceptions to paragraph (h)(4)(ii)(D) should be allowed for the U.S. Coast Guard (USCG) approved safety zones since the signs would be unreadable from vessels outside these safety zones.

Response: The intent of the proposed sign requirement is to warn all types of craft, including private and commercial fishing boats and vessels attendant to the facility, of the potentially toxic hazards. The USCG approved safety zones are designed to prevent collisions of large vessels with platforms and are not usually applicable to vessels attendant to the facility or vessels under 100 feet in length.

§ 250.67(h)(5) Audible warning system (formerly paragraph (h)(4)).

Comment: Seven commenters suggested working changes to make it clear that the monitoring equipment shall be capable of activating alarms.

Response: The MMS agrees and has revised paragraph (h)(5) accordingly.

§ 250.67(h)(6) H₂S-detection and H₂S-monitoring equipment (formerly paragraph (h)(5)).

Comment: Add the mud-return receiver tank (possum belly) and pipe-trip tank to the list of specified areas where atmospheric H₂S sensors are required (paragraph (h)(6)(i)) because the potential for the release of H₂S is high at both of these places during drilling, well-completion, or well-workover operations.

Response: The MMS agrees and has added those areas to the list of H₂S sensing points.

Comment: Five commenters disagreed with the provision in (h)(6)(i) that allows the substitution of an in-the-mud sensor for the air sensor required at the bell nipple. Two commenters supported the supplemental use of in-the-mud sensors. One commenter suggested the deletion of the provision that allows the District Supervisor discretion to require an in-the-mud sensor at the bell nipple if the air sensor at that location is habitually inoperative.

Response: The purpose of an in-the-mud sensor in the mud-return line receiver tank is to detect the potential for H₂S release, so that corrective action can be taken. Further, an in-the-mud sensor may be necessary if the air sensors at the nipple are subject to contamination by splashed mud and rig floor washwater.

However, the air sensor at the bell nipple is necessary when the mud-return line receiver tank is bypassed. This is a common occurrence when tripping drill pipe. Therefore, proposed paragraph (h)(6)(i) only provides for the supplementary use of in-the-mud sensors and authorizes the District Supervisor to require such devices where the performance of ambient air sensors has not been satisfactory.

§ 250.67(h)(6)(ii) (new paragraph).

Comment: Requirements for H₂S sensors on production facilities in proposed paragraph (h)(6)(i) are vague, and MMS should incorporate the sensor location guidelines contained in the latest draft of the American petroleum Institute's (API) RP for Analysis, Design, Installation and Testing of Basic Surface Safety Systems for Offshore Production Platforms, API RP 14C.

Response: The MMS agrees. A new paragraph (h)(1)(x) provides for a drawing (in the H₂S Contingency Plan) showing vessels, wellheads, and other H₂S handling equipment. New paragraph (h)(6)(ii) lists the locations for the sensors required on production facilities.

§ 250.67(h)(6)(iii) (formerly (h)(5)(ii)).

Comment: Twelve commenters suggested a reduction in the calibration frequency and the use of functional tests to determine when re-calibration is required. None presented any data to support their contention. One commenter suggested that daily functional testing begin when the drill bit is 1,500 feet above the potential H₂S zone.

Response: The proposed rule combines the suggestions of H₂S specialists and a functional test requirement specified in the Instrument Society of America's (ISA) RP, Installation, Operation, and Maintenance of Hydrogen Sulfide Detection Instruments, ISA-RP 12.15, Part II-1990. The revision proposes a reduction in function testing and calibration frequencies while authorizing the District Supervisor to require more frequent testing when warranted.

§ 250.67(h)(6)(iv) (formerly (h)(5)(iii)).

Comment: The term "H₂S-detection ampoules" is ambiguous and trade restrictive.

Response: The MMS agrees and has revised the proposal to require "portable H₂S-detection devices."

Because employees entering an area will be exposed to danger before they can use a portable device, the proposed rule does not allow operators to use portable devices to monitor poorly ventilated areas. Proposed paragraphs (h)(6)(i) and (ii) address areas where H₂S may accumulate and requires fixed sensors. Portable devices may be used in other instances such as when the lessee needs to monitor H₂S in nearby facilities.

§ 250.67(h)(7) SO₂-detection and SO₂-monitoring equipment (new paragraph (h)(7)).

Comment: Operators should have the option to use portable or fixed SO₂ monitors to monitor air quality while burning gas containing H₂S.

Another commenter recommended that monitors be capable of detecting a minimum of 2 ppm of SO₂, and that, in lieu of prescribed emergency actions, personnel protection measures should follow the operator's approved Contingency Plan.

Response: These comments were adopted.

§ 250.67(h)(8)(i) (formerly paragraph (h)(6)(i)).

Comment: Require pressure-demand-type respirators with hoseline capability and a specified self-contained breathing time.

Response: The MMS agrees. The proposal requires compliance with ANSI's Z88.2, Practices for Respiratory Protection, which allows use of several types of respirators. The first sentence has been revised to require that all respirators have hoseline capability and nominal breathing time of at least 15 minutes.

Comment: A specified number of spectacle kits and voice-transmission devices suitable for use with breathing apparatus should be required.

Response: The MMS agrees and proposes that at least two voice transmission devices be available. The requirement for spectacle kits remains "as needed" depending on the number of crew members and potential visitors wearing glasses.

§ 250.67(h)(11) Notification of regulatory agencies (formerly paragraph (h)(9)).

Comment: Clarify reporting for releases of H₂S to the USCG and MMS so that routine releases associated with testing, repair, or maintenance of equipment need not be reported.

Response: The MMS has revised paragraph (h)(11) to limit reporting requirements for low-level releases. We have also deleted the requirement for reporting to the USCG because a Memorandum of Understanding between MMS and USCG assigns MMS lead responsibility for H₂S control equipment, gas detection systems, and personnel protection. The MMS will notify the USCG as soon as a potentially hazardous H₂S release has been reported.

§ 250.67(l) Metallurgical properties of equipment for use in a zone known to contain H₂S—(1) General provisions.

Comment: Analyses of failure modes should be done for all materials—not only ones requiring approval under the NACE Standard MR-01-75.

Response: The MMS agrees and has revised paragraph (l)(1) in § 250.67.

§ 250.67(1)(6) Welding.

Comment: Clarify that the welding requirement is applicable to production facilities.

Response: The MMS agrees and has revised and retitled paragraph (l)(6).

Subpart K—Oil and Gas Production Rates

§ 250.175 Flaring and venting of gas.

New paragraph (d).

For safety and emission control purposes, the Regional Supervisor is authorized to restrict the routine flaring of H₂S. A monthly report of volumes flared and H₂S concentrations is required.

Authors

The principal authors of this proposed rule are E.P. Danenberger and Lloyd M. Tracey, Engineering and Technology Division, MMS.

Executive Order (E.O.) 12866

This rule was reviewed under E.O. 12866. The rule was determined not to be a significant rule under the criteria of E.O. 12866 and was, therefore, not reviewed by the Office of Management and Budget. (OMB).

Regulatory Flexibility Act

The Department of the Interior (DOI) has also determined that this proposed rule will not have a significant economic effect on a substantial number of small entities because, in general, the entities that engage in activities offshore are not considered small due to the technical complexities and financial resources necessary to conduct such activities.

Paperwork Reduction Act

This proposed rule adds new information collection requirements to subparts D and K. The information collection requirements contained in this rule have been submitted to OMB for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 et seq.). The collection of this information will not be required until it has been approved by OMB. Public reporting burden for the H₂S information collection requirements contained in subparts D and K are estimated to average 12 hours and 1 hour per response, respectively, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding these burden estimates or any other aspect of this collection of information, including suggestions for reducing the burden, to the Information Collection Clearance Officer; Minerals Management Service; Mail Stop 2053, 381 Elden Street; Herndon, Virginia 22070-4817, and the Office of Management and Budget; Paperwork Reduction Project (1010-0053) for subpart D and (1010-0041) for subpart K; Washington, DC 20503, telephone (202) 395-7340.

Takings Implication Assessment

The DOI certifies that the proposed rule does not represent a governmental action capable of interference with constitutionally protected property rights. Thus, a Takings Implication Assessment need not be prepared pursuant to E.O. 12630, Government

Action and Interference with Constitutionally Protected Property Rights.

E.O. 12778

The DOI has certified to OMB that this proposed rule meets the applicable civil justice reform standards provided in sections 2(a) and 2(b)(2) of E.O. 12778.

National Environmental Policy Act

The DOI has determined that this action does not constitute a major Federal action significantly affecting the quality of the human environment; therefore, preparation of an Environmental Impact Statement is not required.

List of Subjects in 30 CFR Part 250

Continental shelf, Environmental impact statements, Environmental protection, Government contracts, Incorporation by reference, Investigations, Mineral royalties, Oil and gas development and production, Oil and gas exploration, Oil and gas reserves, Penalties, Pipelines, Public lands-mineral resources, Public lands—rights-of-way, Reporting and recordkeeping requirements, Sulphur development and production, Sulphur exploration, Surety bonds.

Dated: March 21, 1995.

Bob Armstrong,

Assistant Secretary, Land and Minerals Management.

For the reasons set forth in the preamble, 30 CFR part 250 is proposed to be amended as follows:

PART 250—OIL AND GAS AND SULPHUR OPERATIONS IN THE OUTER CONTINENTAL SHELF

1. The authority citation for part 250 continues to read as follows:

Authority: 43 U.S.C. 1334.

2. In § 250.1, paragraphs (c)(7) and (g)(1) are revised as follows:

§ 250.1 Documents incorporated by reference.

* * * * *

(c) * * *

(7) ANSI Z88.2-1992, Practices for Respiratory Protection, Incorporated by Reference at: § 250.67(h)(2)(iv) and (h)(6)(i).

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(g) * * *

(1) NACE Standard MR-01-92, Recommended Practice, Sulfide Stress Cracking Resistant Metallic Materials for Oil Field Equipment, January 1992, Incorporated by Reference at: § 250.67(1)(3).

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3. In § 250.2, *Definitions*, revise the definition *Zones known to contain (H₂S)*

and in the definition *Zones where the absence of H₂S* has been confirmed, revise paragraph (1), remove paragraph (2), and redesignate paragraph (3) as paragraph (2) to read as follows:

§ 250.2 Definitions.

* * * * *

Zones known to contain H₂S means geologic formations where prior drilling, logging, coring, testing, or producing operations have confirmed the presence of H₂S in concentrations and volumes that could potentially result in atmospheric concentrations of 20 parts per million (ppm) or more of H₂S.

Zones where the absence of H₂S has been confirmed means one of the following: (1) Geologic formations where prior drilling, logging, coring, testing, or producing operations have confirmed the absence of H₂S in concentrations and volumes that could potentially result in atmospheric concentrations of 20 ppm or more of H₂S,

* * * * *

4. In § 250.67(b), revise the definition *Zones known to contain H₂S* and in the definition *Zones where the absence of H₂S has been confirmed* revise paragraph (1), remove paragraph (2), and redesignate paragraph (3) as paragraph (2) to read as follows:

§ 250.67 Hydrogen sulfide.

* * * * *

(b) * * *

Zones known to contain H₂S means geologic formations where prior drilling, logging, coring, testing, or producing operations have confirmed the presence of H₂S in concentrations and volumes that could potentially result in atmospheric concentrations of 20 ppm or more of H₂S.

Zones where the absence of H₂S has been confirmed means one of the following: (1) Geologic formations where prior drilling, logging, coring, testing, or producing operations have confirmed the absence of H₂S in concentrations and volumes that could potentially result in atmospheric concentrations of 20 ppm or more of H₂S;

* * * * *

5-8. In § 250.67, revise paragraphs (c) through (f) to read as follows:

(c) *Requirement for classification or reclassification of probability of encountering H₂S during operations.* The lessee shall:

(1) Obtain an approved classification for the area from the Regional Supervisor before beginning operations. Classifications are:

(i) "Zones known to contain H₂S";

(ii) "Zones where the presence of H₂S is unknown"; or

(iii) "Zones where the absence of H₂S has been confirmed."

(2) Submit a request for reclassification of a zone when additional data indicate a different classification is needed.

(d) *Requirements for drilling, well-completion, and well-workover operations in zones known to contain H₂S.* The lessee shall comply with paragraphs (d), (h), (i), (j), (k), (l) (1) through (5), and (m) (1) through (13) of this section.

(e) *Requirements for drilling and well-completion operations in zones where the presence of H₂S is unknown.* The lessee shall comply with paragraphs (h) and (i) of this section. If H₂S is encountered that could potentially result in atmospheric concentrations of 20 ppm or more of H₂S, the lessee shall follow requirements of paragraph (d) of this section.

(f) *Requirements for production operations in zones known to contain H₂S.* Lessee shall comply with the requirements in paragraphs (h), (l) (1) through (6), and (m) (7) through (15) of this section.

* * * * *

9. In § 250.67(h), revise paragraphs (h)(1) (iii) through (v), redesignate paragraph (h)(1)(vi) as paragraph (h)(1)(viii), and revise redesignated paragraph (h)(1)(viii); redesignate (h)(1)(vii) as paragraph (h)(1)(ix) and add new paragraphs (h)(1) (vi), (vii), (x), and (xi); revise paragraph (h)(2); redesignate paragraph (h)(3) as paragraph (h)(4) and revise redesignated paragraphs (h)(4)(ii) (A), (D), and (E); add new paragraph (h)(3); redesignate paragraph (h)(4) as paragraph (h)(5) and revise redesignated paragraph (h)(5); redesignate paragraph (h)(5) as paragraph (h)(6) and revise redesignated paragraph (h)(6); redesignate paragraph (h)(6) as paragraph (h)(8) and revise redesignated paragraphs (h)(8) (i) and (v); redesignate paragraph (h)(7) as paragraph (h)(9) and revise redesignated paragraph (h)(9)(v); add new paragraph (h)(7); redesignate paragraph (h)(8) as paragraph (h)(10); redesignate paragraph (h)(9) as paragraph (h)(11) and revise it.

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* * * * *

(h) * * *

(1) * * *

(iii) Duties, responsibilities, and operating procedures to be initiated when the concentration of H₂S in the atmosphere reaches 20 ppm. Include a description of the audible and visual alarms to be activated.

(iv) Designation of briefing areas for assembly of personnel during an H₂S alert. At least two briefing areas shall be established on each facility. The briefing

area that is upwind of the H₂S source at any given time shall be the designated briefing area.

(v) Procedures for the debarking and safe evacuation of all personnel from the facility by vessel, capsule, or lifeboat. If helicopters are to be used during H₂S alerts, include a description of the types of H₂S emergencies during which the risk of helicopter activity is deemed acceptable and the precautions during such flights.

(vi) Procedures for the safe positioning of all vessels attendant to the facility (including their location with respect to wind direction and distance from the facility) and for emergency relocation.

(vii) Procedures for providing protective-breathing equipment for all personnel, including contractors and visitors.

(viii) A list of agencies and facilities to be notified in case of a release of H₂S and the procedure for notification. Include the identification and telephone numbers of all facilities that might be exposed to atmospheric concentrations of 20 ppm or more of H₂S.

* * * * *

(x) For production facilities producing gas containing 20 ppm or more of H₂S, an "H₂S Detector Location Drawing" showing the following:

(A) All vessels, flare outlets, wellheads, and other equipment handling production containing H₂S;

(B) The approximate maximum concentration of H₂S in the gas stream; and

(C) The location of all H₂S sensors required by paragraph (h)(6)(ii) of this section.

(xi) The H₂S Contingency Plan shall describe the operational conditions during which gas containing H₂S would be flared, estimate the maximum gas flow rates, H₂S concentrations and duration of flaring, assess the risks to personnel, and identify the precautionary measures to be taken. The precautions shall include:

(A) Primary and alternate methods for igniting the flare and procedures for sustaining ignition and monitoring the status of the flare (i.e., ignited or extinguished).

(B) Procedures for shutting off flow to the flare in the event the flare is accidentally or intentionally extinguished.

(C) A complete description of portable or fixed sulphur dioxide (SO₂)-detection system(s) to be used to determine the SO₂ concentration and personnel exposure hazard when gas containing H₂S is burned.

(D) A description of the increased monitoring and warning procedures to

be taken when the SO₂ concentration in the atmosphere reaches 2 ppm and personnel protection measures or evacuation procedures to be initiated when the SO₂ concentration in the atmosphere reaches 5 ppm.

(2) *Training program.* All operator and contract personnel shall complete an H₂S training program, as described in the operator's approved H₂S Contingency Plan, before beginning work at an Outer Continental Shelf facility. Maintain written documentation of this training at the facility where the individual is employed. Alternatively, the employee may carry a training completion card. The H₂S training program described below shall be repeated within 1 year after completion of the previous class. Employees or contractors transferred to another facility shall attend a supplemental briefing on H₂S equipment and procedures at that facility before beginning duty. Visitors who will remain on the facility overnight shall receive the training described in this paragraph. Visitors who will depart on the day of arrival are exempt from the training described in this paragraph, but they shall, upon arrival, complete an abbreviated training program that includes the following: Information on the location and use of an assigned respirator; practice in donning and adjusting the assigned respirator; information on the safe briefing areas, alarm system, and hazards of H₂S and SO₂; and instructions on their responsibilities in the event of an H₂S release. Safety information shall be prominently posted on the facility and on vessels serving the facility. The training program shall include the following:

(i) Instruction on the hazards of H₂S and SO₂ and the provisions for personnel safety contained in the H₂S Contingency Plan.

(ii) Instruction in the proper use of safety equipment which the employee may be required to use.

(iii) Information on the location of protective-breathing equipment, H₂S detectors and alarms, ventilation equipment, briefing areas, warning systems, evacuation procedures, and the direction of the prevailing winds.

(iv) Restrictions and corrective measures concerning beards, spectacles, and contact lenses in conformance with ANSI's Practices for Respiratory Protection (ANSI Z88.2).

(v) Instruction in basic first-aid procedures applicable to victims of H₂S exposure. During all drills and training sessions, the lessee shall address procedures for rescue and first aid for H₂S victims. Lessee shall have readily

available on each facility, and instruct personnel as to the location and use of, the following equipment:

(A) A first-aid kit of appropriate size and content for the number of personnel on the facility;

(B) At least three resuscitators complete with face masks, oxygen bottles, and spare oxygen bottles; and

(C) At least one litter or an equivalent device.

(vi) Information on the meaning of all warning signals.

(3) *Drills.* Conduct a drill for each person at the facility within 24 hours after duty begins and at least once during every subsequent 7-day period. At least monthly, a discussion of drill performance, new H₂S considerations at the facility, and other updated H₂S information shall be topics at facility safety meetings. Keep records of attendance for drilling, well-completion, and well-workover operations at the facility until operations are completed. Keep records of attendance for production operations at the facility or at the nearest field office for 1 year.

(4) * * *

(ii) * * *

(A) Each sign shall be a high-visibility yellow color with black lettering of a minimum of 12 inches in height reading as follows:

DANGER

POISONOUS GAS

HYDROGEN SULFIDE

and in lettering of a minimum of 7 inches in height:

DO NOT APPROACH IF RED FLAG IS FLYING

Existing signs containing the words "Danger-Hydrogen Sulfide-H₂S" are acceptable provided the words "POISONOUS GAS" and "DO NOT APPROACH IF RED FLAG IS FLYING" in lettering of a minimum of 7 inches in height are displayed on a sign immediately adjacent to the existing sign.

* * * * *

(D) When the atmospheric concentration of H₂S reaches 20 ppm, display signs and flags and activate visual and audible alarms.

(E) Display warning signs required under paragraph (h)(4)(ii)(A) of this section at all times on facilities with wells capable of producing H₂S and on facilities which process gas containing H₂S.

* * * * *

(5) *Audible warning system.* Install a public address system and a siren, horn, or other similar warning devices with a unique sound used only for H₂S warnings. The warning devices (audible

and visual) shall be suitable for the electrical classification of the area and shall be activated by the H₂S-detection system when the concentration of H₂S in the atmosphere reaches 20 ppm. When the warning devices are activated, the designated responsible persons shall inform personnel of the level of danger and issue instructions on the initiation of appropriate protective measures.

(6) *H₂S-detection and H₂S-monitoring equipment.* (1) Each facility shall have an H₂S-detection system that activates audible and visual alarms when the concentration of H₂S in the atmosphere reaches 20 ppm. The detection systems shall be capable of sensing a minimum of 10 ppm of H₂S in the atmosphere. For drilling, well-completion, and well-workover operations, sensors shall be located at the bell nipple, mud-return line receiver tank (possum belly), pipe-trip tank, shale shaker, well-control fluid pit area, driller's station, living quarters, and all other areas where H₂S may accumulate. H₂S-detection systems that measure hydrogen-ion (pH) and hydrosulfide-ion (HS) and sulfide-ion (S⁼) concentrations in the mud and calculate and display the theoretical concentration of H₂S that could exist in the air above the mud may be used in water-based muds to supplement the required in-the-air sensors. The District Supervisor may require such a mud sensor to be utilized in the mud-return line receiver tank (possum belly) in cases where the ambient air sensors in the mud-return system do not consistently and accurately detect the presence of H₂S.

(ii) On production facilities, locate H₂S detection sensors as follows:

(A) At least one sensor per 400 square feet of deck area or fractional part thereof, in rooms, buildings, or deck areas where atmospheric concentrations of H₂S could reach 20 ppm or more.

(B) In buildings where personnel regularly or occasionally sleep and on a platform where gas containing H₂S of 20 ppm or greater is produced, processed, or otherwise handled.

(C) Within 10 feet of all vessels, compressors, wellheads, manifolds, and pumps that could release H₂S in volumes and concentrations sufficient to result in atmospheric concentrations of 20 ppm of H₂S at a distance of 10 feet. These sensor locations shall be depicted in the "H₂S Detector Location Drawing" required by paragraph (h)(1)(x) of this section. One sensor may be utilized to detect H₂S around multiple pieces of equipment, provided the sensor is located no more than 10 feet from each piece. Monitor compressors exceeding 50 horse power with at least two sensors. Wells shut in at the master

valve and sealed closed are exempt. Consider the location of piping system fittings, flanges, valves, and other devices subject to leaks to the atmosphere in determining the placement of sensors. Also consider design factors, such as the type of decking and the location of fire walls, in the placement of sensors.

(iii)(A) Functionally test the H₂S-detection and H₂S-monitoring equipment with a known concentration in the range of 10 to 30 ppm of H₂S at least once every 24 hours when conducting drilling, drill stem testing, well-completion, and/or well-workover operations in wells in areas classified as zones where the presence of H₂S is unknown or known. When drilling, begin functional testing before the bit is 1,500 feet (vertically) above a potential H₂S zone.

(B) Functionally test the H₂S detectors and monitors for production operations with a known concentration in the range of 10 to 30 ppm of H₂S at a frequency such that no more than 14 days shall elapse between functional tests.

(C) If the results of any functional test are not within 2 ppm or 10 percent, whichever is greater, of the applied concentration, recalibrate the instrument. The functional tests and calibrations shall be conducted by personnel trained to calibrate the particular H₂S-detector and H₂S-monitoring equipment being used. Maintain records of testing and calibration results at the facility to show the present status and history of each device, including dates and details of installation, removal, inspection, testing, repairing, adjustments, and reinstallation. Record dates of testing and calibrations in the drilling or production operations report, as applicable. Records shall be available for inspection by MMS personnel. When equipment requires recalibration as a result of two consecutive functional tests, the District Supervisor may require the H₂S-detection and H₂S-monitoring equipment to be functionally tested and calibrated more frequently.

(iv) Portable H₂S-detection devices capable of detecting a 10-ppm concentration of H₂S in the air shall be available for use by all personnel.

(v) Lessee shall equip attendant vessels that are stationed overnight alongside facilities where the presence of H₂S is known or unknown with an H₂S-detection system that activates audible and visual alarms when the concentration of H₂S in the atmosphere reaches 20 ppm. The detection system shall be capable of sensing a minimum 10 ppm of H₂S in the atmosphere with at least one sensing point in the crew

quarters. This requirement is not applicable to attendant vessels that, in accordance with the positioning procedure described in the approved H₂S Contingency Plan required by paragraph (h)(1)(vi) of this section, are positioned upwind and at a safe distance from the facility.

(vi) The District Supervisor may require the lessee to equip nearby facilities with portable or fixed H₂S detector(s). These detectors shall be tested and calibrated in accordance with paragraph (h)(6)(iii) of this section.

(7) *SO₂-detection and SO₂-monitoring equipment.* If gas containing H₂S is accidentally or intentionally burned, the operator shall monitor the SO₂ concentration in the air with portable or strategically placed fixed devices capable of detecting a minimum of 2 ppm of SO₂. Reading shall be taken at least hourly and at any time personnel detect SO₂ odor or nasal irritation. The District Supervisory may waive the monitoring requirements of this paragraph provided sufficient engineering controls, such as ventilation systems and multiple flare booms or elevated flare booms, are utilized to effectively minimize or eliminate the hazards associated with SO₂. If the SO₂ concentration in the work areas reaches 2 ppm, the personnel protective measures specified in the H₂S Contingency Plan shall be implemented. If fixed or portable electronic sensing devices are used, these devices shall be calibrated every 3 months. If length of stain gas detector tube type detectors are used, the sensing date shall not exceed the expiration dates for the tubes used.

(8) * * *

(i) Personnel, including contractors and visitors on a facility operating in a zone known to contain H₂S or a zone where the presence of H₂S of unknown, shall have immediate access to self-contained pressure-demand-type respirators with hose-line capability and a nominal breathing time of at least 15 minutes. The design, selection, use, and maintenance of these respirators shall conform to ANSI Z88.2, Practices for Respiratory Protection. At least two voice-transmission devices, which can be used while wearing a respirator, shall be available for use by designated key personnel. Spectacle kits shall be made available as needed.

* * * * *

(v) Helicopter flights to and from facilities during H₂S alerts shall be limited to the conditions specified in the H₂S Contingency Plan. During authorized flights, pressure-demand-type respirators shall be utilized as required by the plan. All members of

flight crews shall be trained in the use of the particular type(s) of respirator equipment made available.

* * * * *

(9) * * *

(v) At least three resuscitators.

* * * * *

(11) *Notification of regulatory agencies.* The lessee shall notify MMS without delay in the event of a gas release which results in a 15-minute time weighted average (TWA) atmospheric concentration of H₂S anywhere on the facility of 20 ppm or more.

10. In § 250.67(i), revise the title of paragraph (i) and revise paragraphs (i)(1), (i)(2), and (i)(3)(i) to read as follows:

§ 250.67 Hydrogen sulfide.

* * * * *

(i) *Drilling, completion, and workover fluids program when operating in a zone known to contain H₂S or a zone where the presence of H₂S is unknown.*—(1) *Well-control fluid base.* Lessee may use either water- or oil-base muds in accordance with § 250.40(b)(1).

(2) *Well-control fluid testing.* If water-base, well-control fluids are used, and if H₂S is detected by ambient air sensors, either the Garrett-Gas-Train test or a comparable test for soluble sulfides shall be conducted immediately to confirm the presence of H₂S. If the concentration detected by air sensors is in excess of 20 ppm, personnel conducting the test shall don protective-breathing equipment conforming to paragraph (h)(8)(i) of this section.

(3) * * *

(i) *Scavengers.* Scavengers for control of H₂S shall be available on the facility. When H₂S is detected, scavengers shall be added as needed. Drilling shall be suspended until the scavenger is circulated throughout the system.

* * * * *

11. In § 250.67(k), revise paragraph (k)(3) to read as follows:

§ 250.67 Hydrogen sulfide.

* * * * *

(k) * * *

(3) All produced gases shall be burned through a flare which meets the requirements of paragraph (m)(7) of this section. Prior to flaring gas containing H₂S, the lessee shall activate SO₂ monitoring equipment in accordance with paragraph (h)(7) of this section. If SO₂ in excess of 2 ppm is detected, the lessee shall implement the personnel protective measures required by the H₂S Contingency Plan specifications of paragraph (h)(1)(xi)(D) of this section. The flaring of well test gas is also

subject to the requirement of § 250.175. Gases from stored test fluids shall be piped into the flare outlet and burned.

* * * * *

12. In § 250.67(1), revise paragraphs (l)(1) and (l)(2) and the title and text of paragraph (l)(6) to read as follows:

§ 250.67 Hydrogen sulfide.

* * * * *

(l) *Metallurgical properties of equipment for use in a zone known to contain H₂S*—(1) *General provisions.* Equipment used in H₂S environments shall be constructed of materials with metallurgical properties that resist or prevent sulfide stress cracking (also known as hydrogen embrittlement, stress corrosion cracking, or H₂S embrittlement) chloride-stress cracking, hydrogen-induced cracking, and other failure modes.

(2) *Tubulars and other equipment.* Tubulars and other equipment, casing, tubing, drill pipe, couplings, flanges, and related equipment shall be designed for H₂S service.

* * * * *

(6) *Welding.* The lessee shall keep the use of welding to a minimum during the installation or modification of a production facility. Welding shall be done in a manner that ensures resistance to sulfide stress cracking.

* * * * *

13. In § 250.67(m), revise paragraphs (m)(1), (4), and (13) to read as follows:

§ 250.67 Hydrogen sulfide.

* * * * *

(m) * * *

(1) *Additional precautions after penetration of an H₂S-bearing zone.* In addition to the monitoring requirements in paragraph (h)(6)(i) of this section, continuously observe the H₂S levels indicated by the monitors in the work areas during the following operations:

* * * * *

(4) *Stripping operations.* Personnel shall monitor displaced well-control fluid returns and wear protective-breathing equipment in the working area when the atmospheric concentration of the H₂S reaches 20 ppm or if the well is under pressure.

* * * * *

(13) *Water disposal.* For produced water disposed of by means other than subsurface injection, the lessee shall submit to the District Supervisor an analysis of the anticipated H₂S content of the water at the final treatment vessel and at the discharge point. The District Supervisor may require that the water be treated for the removal of H₂S. The District Supervisor may require the submittal of an updated analysis if the

water disposal rate or the potential H₂S content increases.

* * * * *

14. In § 250.175, *Flaring and venting of gas*, add new paragraph (d) as follows:

§ 250.175 Flaring and venting of gas.

* * * * *

(d) *Requirements for flaring and venting of gas containing H₂S*—(1) *Flaring of gas containing H₂S*. (i) The Regional Supervisor may, for safety and air pollution prevention purposes, further restrict the flaring of gas containing H₂S. Information provided in the lessee's H₂S Contingency Plan (§ 250.67(h)(1)(xi)), Exploration Plan, or Development and Production Plan, and associated documents will be used in determining the need for such restrictions.

(ii) If the Regional Supervisor determines that flaring at a facility or group of facilities may significantly affect the air quality of an onshore area, the Regional Supervisor may require the operator(s) to conduct an air quality modeling analysis to determine the potential effect of facility emissions on onshore ambient concentrations of SO₂. The Regional Supervisor may require monitoring and reporting or may restrict or prohibit flaring pursuant to §§ 250.45 and 250.46.

(2) *Venting of gas containing H₂S*. The lessee shall not vent gas containing H₂S except for minor releases during maintenance and repair activities that do not result in a 15-minute TWA atmospheric concentration of H₂S of 20 ppm or higher anywhere on the platform.

(3) *Reporting of flared gas containing H₂S*. In addition to the recordkeeping requirements of paragraphs (c) and (d) of this section, the operator shall submit to the Regional Supervisor a monthly report of flared and vented gas containing H₂S. The report shall contain the following information:

(i) On a daily basis, the volume and duration of each flaring episode.

(ii) H₂S concentration in the flared gas.

(iii) Calculated amount of SO₂ emitted.

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Office of Surface Mining Reclamation and Enforcement

30 CFR Part 946

Virginia Regulatory Program

AGENCY: Office of Surface Mining Reclamation and Enforcement (OSM), Interior.

ACTION: Announcement of reopening of public comment period and opportunity for public hearing.

SUMMARY: OSM is reopening a public comment period until May 26, 1995, and is requesting public comment that would be considered in deciding how to implement in Virginia underground coal mine subsidence control and water replacement provisions of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), the implementing Federal regulations, and/or the counterpart State provisions. Recent amendments to SMCRA and the implementing Federal regulations require that underground coal mining operations conducted after October 24, 1992, promptly repair or compensate for subsidence-caused material damage to noncommercial buildings and to occupied dwellings and related structures. These provisions also require such operations to promptly replace drinking, domestic, and residential water supplies that have been adversely affected by underground coal mining.

OSM must decide if the Virginia regulatory program (hereinafter referred to as the "Virginia program") currently has adequate counterpart provisions in place to promptly implement the recent amendments to SMCRA and the Federal regulations. After consultation with Virginia and consideration of public comments, OSM will decide whether initial enforcement in Virginia will be accomplished through the State program amendment process or by State enforcement, by interim direct OSM enforcement, or by joint State and OSM enforcement.

DATES: Written comments must be received by 4:00 p.m., E.D.T. on May 26, 1995. If requested, OSM will hold a public hearing on May 22, 1995, concerning how the underground coal mine subsidence control and water replacement provisions of SMCRA and the implementing Federal regulations, or the counterpart State provisions, should be implemented in Virginia. Requests to speak at the hearing must be received by 4:00 p.m., E.D.T. on May 18, 1995.

ADDRESSES: Written comments and requests to speak at the hearing should be mailed or hand-delivered to Robert

A. Penn, Director, Big Stone Gap Field Office at the address listed below.

Copies of the applicable parts of the Virginia program, SMCRA, the implementing Federal regulations, information provided by Virginia concerning its authority to implement State counterparts to SMCRA and the implementing Federal regulations, a listing of any scheduled public hearings, and all written comments received in response to this document will be available for public review at the address listed below during normal business hours, Monday through Friday, excluding holidays: Robert A. Penn, Director, Big Stone Gap Field Office, Office of Surface Mining Reclamation and Enforcement, P.O. Drawer 1217, Big Stone Gap, Virginia 24219, Telephone: (703) 523-4303.

FOR FURTHER INFORMATION CONTACT: Robert A. Penn, Director, Big Stone Gap Field Office, Telephone: (703) 523-4303.

SUPPLEMENTARY INFORMATION:

I. Background

A. The Energy Policy Act

Section 2504 of the Energy Policy Act of 1992, Pub. L. 102-486, 106 Stat. 2776 (1992) added new section 720 to SMCRA. Section 720(a)(1) requires that all underground coal mining operations promptly repair or compensate for subsidence-caused material damage to noncommercial buildings and to occupied residential dwellings and related structures. Repair of damage includes rehabilitation, restoration, or replacement of the structures identified in section 720(a)(1), and compensation must be provided to the owner in the full amount of the reduction in value of the damaged structures as a result of subsidence. Section 720(a)(2) requires prompt replacement of certain identified water supplies if those supplies have been adversely affected by underground coal mining operations.

These provisions requiring prompt repair or compensation for damage to structures, and prompt replacement of water supplies, went into effect upon passage of the Energy Policy Act on October 24, 1992. As a result, underground coal mine permittees in States with OSM-approved regulatory programs are required to comply with these provisions for operations conducted after October 24, 1992.

B. The Federal Regulations Implementing the Energy Policy Act

On March 31, 1995, OSM promulgated regulations at 30 CFR Part 817 to implement the performance